BLUE OCEAN STRATEGY AND INNOVATION PERFORMANCE, MEDIATED BY INNOVATION STRATEGIES

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DEDICATION

To my parents who inspired me to reach here, and my family who gave me strength to complete this endeavor successfully.

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ABSTRACT

Innovation is one of the integral elements of competitive advantage of any organization and the country. Global innovation index has been representing, a decline in Malaysian innovation performance since 2013. Manufacturing sector supports 82% in Malaysian exports but 31% of its firms are non-innovative. In pursuit of investigating factors, which can influence innovation performance, the researcher turns to the Blue Ocean Strategy (BOS). Impact of all five constructs of BOS (Creating New Uncontested Market Space, Making Competition Irrelevant, Create and Capture New Demand, Achieving Differentiation and Cost, Breaking Value-Cost Trade off) were identified with Innovation Performance. Moreover, the mediating role of Inbound Open Innovation and Outbound Open Innovation was determined. This research is an empirical quantitative study, performed in Malaysian manufacturing organizations. One manager from each of the 550 organizations was contacted using stratified proportionate sampling of large, medium and small manufacturing organizations to collect data through online resources. Response rate was 60.18%, above the required sample size of 327. Variance-based structural equation modeling was used to perform the analysis, using SmartPLS3 and SPSS Version 25. Results represent that three BOS constructs are significant and are positively related to Innovation Performance. While Inbound Open innovation is positively related to innovation performance. Using Preacher & Hayes (2008), Inbound Open innovation, significantly and positively mediates between the three constructs of BOS and Innovation Performance. This research contributes to the body of knowledge of BOS, and Innovation, and highlights the role of Open Innovation strategies. It also contributes academically as SEM predicts the role of each construct of BOS with Innovation Performance. Moreover, the role of Open innovation strategies is examined between the BOS and Innovation.

ABSTRAK

Inovasi merupakan salah satu komponen penting yang menjadi persaingan positif kepada mana-mana organisasi dan negara. Indeks inovasi global telah menunjukkan, penurunan dalam prestasi Inovasi Malaysia sejak tahun 2013. Sektor pembuatan menyumbang eksport sebanyak 82% di Malaysia namun 31% daripadanya dari firma yang tidak inovatif. usaha mengkaji faktor-faktor yang boleh mempengaruhi prestasi inovasi, penyelidik telah beralih kepada Strategi Lautan Biru (BOS). Selain itu, peranan pengantara kemasukan inovasi terbuka dan pengeluaran inovasi terbuka telah ditentukan di antara hubungan lima konstruk BOS dan Prestasi Inovasi. Kajian ini merupakan kajian secara ilmiah berbentuk kuantitatif, yang dilakukan dalam sektor pembuatan Malaysia. Unit analisis adalah organisasi dan sederhana dan kecil dalam organisasi pembuatan untuk mengumpul data dan kebanyakannya melalui sumber-sumber dalam talian. Varians-Permodelan SEM telah digunakan untuk melakukan analisis, iaitu menggunakan perisian SmartPLS3 dan SPSS versi 25. Hasil kajian menunjukkan tiga konstruk BOS adalah signifikan dan berhubung secara positif dengan Pencapaian Inovasi. Manakala Inovasi Kemasukan Terbuka adalah berhubung secara positif dengan Pencapaian Inovasi. Merujuk kepada Preacher & Hayes (2008), Inovasi Kemasukan Terbuka adalah signifikan dan menjadi mediasi secara positif di antara tiga konstruk BOS dan Pencapaian Inovasi. Kajian ini menyumbang kepada keutamaan pengetahuan tentang hubungan di antara BOS dan Prestasi Inovasi, serta menyerlahkan peranan Inovasi Terbuka. Ianya juga menyumbang secara teori dan kajian ilmiah sebagai persamaan struktur pemodelan meramalkan peranan setiap konstruk BOS dengan Prestasi Inovasi.

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LIST OF SYMBOLS AND ABBREVIATIONS

AD&C	-	Achieving Differentiation and Cost
BOS	-	Blue Ocean Strategy
BVCT	-	Breaking Value Cost Trade-off
CNUM	-	Creating New Uncontested Market
CND	-	Creating New Demand
DOSM	-	Department of Statistics Malaysia
GII	-	Global Innovation Index
IBI	-	Inbound Innovation
IP	-	Innovation Performance
MCI	-	Making Competition Irrelevant
OI	-	Open Innovation
OBI	-	Outbound Innovation
PLS	-	Partial Least Square
ROS	-	Red Ocean Strategy
SEM	-	Structural Equation Modeling
SME	-	Small and Medium Enterprises

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter starts with the background of this research study, discussing importance of innovation performance, business strategies and innovation strategies. Then, problem statement based of ideal, reality and consequences approach, describes the research problem of declining innovation performance in Malaysia. It also describes about the existing theoretical gap in the literature among the Blue Ocean strategy, open innovation, and innovation performance. Then research questions of the study are presented and research objectives are pointed. Scope of the research defines boundaries of the research, and then significance of the research, highlighting importance of the research is described before the summary of the chapter.

1.2 Research background

The importance of innovation as an essential driver of economic growth is established (Solow, 1957). Innovation is generally considered the lifeline of organizational survival and growth. Innovations are the lynchpin in organizational efforts to improve productivity and compete globally (Zahra, 1993). Innovation has significantly altered the human way of living through technology and research-and-development which continuously introduce new products. These innovations have significantly contributed to the outcomes of the economy (Porter, 1992). Hence, it is very fundamental for businesses organizations to implement innovation management, in the contemporary times, to survive and prosper. Researchers have signaled the importance of determinants of innovation and the need to understand these determinants as

competitive advantage is achieved in organizations through innovations (Porter, 1992). While the fields of strategic management have become more complex, with new contradictory and different approaches and techniques (Casadesus & Ricart, 2010; Scherer, 1998). Though there have always been efforts to investigate these different approaches (Ketchen, Boyd, & Bergh, 2008). Developing and sustaining competitive edge through different strategies, for example; Miles and Snow's strategy approach, Porter's differentiation and cost, the resource-based approach of tangible and non-tangible assets, dynamic capabilities (Teece & Pisano, 1994) and BOS (Kim & Mauborgne, 2005) have been the focus of the organizations (Grant, 2016). These have helped organizations to a great extent to compete, though in today's difficult business environment where diversification and innovation are very important for growth (Parnell, 2010). Strategic thinking has revolutionized the business and scholars deserve appreciation (Hitt, Ireland, & Hoskisson, 2012).

The strategy has been developed through centuries to reach the modern organizational stage, as Porter (1996) said that organizational effectiveness is not a strategy. According to Mintzberg (1978), the pattern of decisions for the future of firm was defined as a strategy. Porter (1980) produced his strategy for competitive advantage based on differentiation and cost. Before him, Miles, Snow, Meyer, & Coleman (1978) presented the (prosperous, analyzer, defender, and reactor) strategies for firms growth in competition. Kim & Mauborgne (2005) shook the strategic research world with the phenomena of making the competition irrelevant. They presented the 'The BOS' which has "a specific constant configuration of strategic rationale behind the creation of 'new markets and industries' to create demand rather fighting" (Kim & Mauborgne, 2005). According to them, competition is irrelevant, and organizations have to swim out of red bloody oceans of competition. There have been many research, appreciation, and critique around the world on this business strategy (Butler, 2008; Lindič, Bavdaž, & Kovačič, 2012; Rebón, Ocariz, Gerrikagoitia, & Alzua, 2015; Wubben, Düsseldorf, & Batterink, 2012). The big part of the debate revolved around the differences between Red Ocean Strategies (ROS) of the competition, and BOS of uncontested industries and markets. BOS created enormous interest among researchers all over the world because of its attributes and results.

On the other side, innovation has played a very important role in organizational growth and sustainability (Bain & Kleinknecht, 2016; Burns & Stalker, 1961;

Utterback, 1994). In modern literature, innovation strategies have been developed and investigated frequently by research scholars (Calida & Hester, 2010; Dasgupta & Sanyal, 2009; Kleinknecht, 2016; Matzler, Bailom, Friedrich, & Kohler, 2013; Vinayan, Jayashree, & Marthandan, 2012). Kim & Mauborgne (2005) and Santos, Doz, and Williamson (2004) were among many researchers to find the relation between strategy and innovation. Innovation is rationally thought as the reason behind sustainability and progress of any organizations. Open innovation has created much attention in the recent literature (Chesbrough, 2003b; Chesbrough, 2006). Several theories have been presented in the last three decades by strategic management literature. The industrial organization strategy model by Porter (1985), and theory of resource-based view by Wernerfelt (1984), were very important in strategic management research, and later knowledge-based view of organization got attraction of researchers, along with collaboration and dynamic capabilities theory (Teece & Pisano, 1994; Grant & Fuller, 1995; Grant, 2002).

This assumption orientation of these new strategic viewpoints was diverse, progressively flowing from the internal resources and competencies, as the main driver for long-term competitiveness, towards the role of acquiring knowledge and integration (Christensen, 2006). In previous few years, the varying circumstance for innovation characterized by growing outsourcing, led towards the "open innovation". The open innovation paradigm has turned out to be more widespread and fascinated the response of increasing researchers and managers to turn to external sources of innovation to match the technological innovations (Chesbrough, 2003b). Contemporarily organizations have to accomplish the role of integrator, to accumulate various capabilities and competencies into a new application (Christensen, 2006). Crema, Verbano, & Venturini (2014) attempted to analyze this between competitive strategies and open innovation and performance. These previous work simulates the need to investigate the link between BOS and open innovation in depth.

1.3 Problem statement

Innovation has significantly altered the human way of living through technology and research-and-development which continuously introduce new products (Porter, 1992). These innovations have significantly contributed to the outcomes of the economy. To improve and continue competitiveness and warrant economic success, organizations gradually enhance their innovation performance, endeavor for more innovation and search for new opportunities for commercialization (Inauen & Schenker, 2012). Innovation has played a very important role in organizational growth and sustainability (Bain & Kleinknecht, 2016; Terziovski, 2002). Innovation is rationally thought as the reason behind sustainability and progress of any organizations. Recently, innovation has got great importance, specifically for the industrial sector. Innovation is considered an important element of businesses to enhance their market shares and revenue. It is one of the main drivers of sustainable competitive advantage (Bhaskaran, 2006). In contemporary times, innovation is compulsory for competitive edge as it can bring many success for the firm (Bozkurt & Kalkan, 2014). Innovation is the need of any organization to grow the market share (Johannessen, Olsen, & Lumpkin, 2001). Innovation performance has attracted a noteworthy amount of consideration in the literature (Corsino & Gabriele, 2010; Fontana & Nesta, 2009) and is directly linked with organization's business performance (Rauch, Wiklund, Lumpkin, & Frese, 2009).

Internationalization and competition provide motivation to the organizations as increase of innovation brings competitive edge (Harris, McAdam, McCausland, & Reid, 2013). To have a competitive edge, organizations have to innovate systematically with multiple strategies (Shafiq, Rosmaini, & Mehwish, 2017; Shafiq & Tasmin, 2016). Open innovation has created much attention in the recent literature as it brings more opportunities for the organizations (Chesbrough, 2006). Malaysia is the world's 23rd most competitive economy in 2017-18 (Schwab, 2017) although the country reached the heights of 18th position in 2015-16 (Schwab & Sala-i-Martin, 2015). Innovation is the 12th pillar of the competitive economy. Moreover, Malaysia is the 5th largest economy in Southeast Asia being the 35th biggest economy globally, with the estimated GDP of US$296.4 Billion (Koen, Asada, Nixon, Rahuman, & Arif, 2017). Manufacturing sector contributes 22.7% of GDP, second only to service sector that is

51%. GDP growth of Malaysia is around 4.5%, with a population of over 31.7 Million and economy of over $746.821 billion (Sabri, 2016). The Table 1.1 represents the contribution of the manufacturing sector in Malaysian Economy.

Table 1. 1: Contribution of manufacturing sector in Malaysian economy (Department of Statistics Malaysia)

Manufacturing Sector Contribution	Figures
Export	81.5%
GDP	22.7% (RM 69b)
Labor force	7% (1.03M)
Growth	5%

The Malaysian manufacturing sector contributes 81.5% of Malaysia's total exports. While 7% workforce of Malaysia is attached to the manufacturing sector (Sabri, 2016). Innovation is considered in literature, an important component in the manufacturing industry which supports the firms to be more competitive and have competitive advantage in the market (Banerjee & Srivastava, 2012). Innovation performance of Malaysia has been on the continuous decline since 2012 (Dutta, Lanvin, & Wunsch-Vincent, 2015). Malaysian manufacturing organizations are hybrid organizations as they have to achieve financial returns while fulfilling their social responsibilities. Despite government intentions and stress on innovation strategy, the 2017 Global Innovation Index showed Malaysia's unceasing decline from the 32nd rank in 2012 to 37th rank in 2017. It is behind some distance to neighboring Singapore, a regional and international competitor (Dutta, Lanvin, & Wunsch-Vincent, 2017). The government of the Malaysia, had set out its ambitions to join the globe's prominent economic countries by 2020, consistently over various Malaysia plans, and recognized at the premier levels that the Malaysian innovation setting require continue focus and investment to attain this goal (Koen et al., 2017). Country's National Innovation Strategy, clearly mentioned that various forms of innovation are important (Ahmed, 2011). It anticipated that, consequently the structure should be adopted for the National Corporate Innovation Index (NCII). Innovation and productivity were among the six strategic thrusts for the 11th Malaysian plan (Malaysia, 2015). It was highlighted that, to be effective, strategies to support innovation should reflect the techniques, in which

innovation takes place in contemporary times. Innovation is considerably more than research and development, intangible elements such as human capital, and organizational structures are part of innovation, as well as product and process innovations, organizational and societal innovations and marketing are part of innovation (Ahmed, 2011). The decline of Malaysia on the global innovation index is evident from the Table 1.2.

Table 1.2: Ranking and Score (0-100): Global Innovation Index, 2012-2016

COUNTRY / ECONOMY	INCOME	2016		2015		2014		2013		2012	
		RANK	SCORE	RANK	SCORE	RANK	SCORE	RANK	SCORE	RANK	SCORE
Switzerland	HI	1	66.28	1	68.3	1	64.78	1	66.59	1	68.2
Sweden	HI	2	63.57	3	62.4	3	62.29	2	61.36	2	64.8
United Kingdom	HI	3	61.93	2	62.42	2	62.37	3	61.25	5	61.2
USA	HI	4	61.40	5	60.1	6	60.09	5	60.31	10	57.7
Finland	HI	5	59.90	6	59.97	4	60.67	6	59.51	4	61.8
Singapore	HI	6	59.16	7	59.36	7	59.24	8	59.41	3	63.5
Denmark	HI	8	58.45	10	57.7	8	57.52	9	58.34	7	59.9
Hong Kong (SAR)	HI	14	55.69	11	57.23	10	56.82	7	59.43	8	58.7
China	UM	25	50.57	29	47.47	29	46.57	35	44.66	34	45.4
Spain	HI	28	49.19	27	49.07	27	49.27	26	49.41	29	47.2
Portugal	HI	30	46.45	30	46.61	32	45.63	34	45.10	35	45.3
Cyprus	HI	31	46.34	34	43.51	30	45.82	27	49.32	28	47.9
Slovenia	HI	32	45.97	28	48.49	28	47.23	30	47.32	26	49.9
Malaysia	UM	35	43.36	32	45.98	33	45.60	32	46.92	32	45.9

This rank has further declined from the 35th position in 2016 to the 37th position in 2017 Global innovation index as shown in Figure 1.1.

Global Innovation Index 2017 rankings

Country/Economy	Score (0–100)	Rank	Income	Rank	Region	Rank
Switzerland	67.69	1	HI	1	EUR	1
Sweden	63.82	2	HI	2	EUR	2
Netherlands	63.36	3	HI	3	EUR	3
United States of America	61.40	4	HI	4	NAC	1
United Kingdom	60.89	5	HI	5	EUR	4
Denmark	58.70	6	HI	6	EUR	5
Singapore	58.69	7	HI	7	SEAO	1
Finland	58.49	8	HI	8	EUR	6
Germany	58.39	9	HI	9	EUR	7
Ireland	58.13	10	HI	10	EUR	8
Korea, Rep.	57.70	11	HI	11	SEAO	2
Luxembourg	56.40	12	HI	12	EUR	9
Iceland	55.76	13	HI	13	EUR	10
Japan	54.72	14	HI	14	SEAO	3
France	54.18	15	HI	15	EUR	11
Hong Kong (China)	53.88	16	HI	16	SEAO	4
Israel	53.88	17	HI	17	NAWA	1
Canada	53.65	18	HI	18	NAC	2
Norway	53.14	19	HI	19	EUR	12
Austria	53.10	20	HI	20	EUR	13
New Zealand	52.87	21	HI	21	SEAO	5
China	52.54	22	UM	1	SEAO	6
Australia	51.83	23	HI	22	SEAO	7
Czech Republic	50.98	24	HI	23	EUR	14
Estonia	50.93	25	HI	24	EUR	15
Malta	50.60	26	HI	25	EUR	16
Belgium	49.85	27	HI	26	EUR	17
Spain	48.81	28	HI	27	EUR	18
Italy	46.96	29	HI	28	EUR	19
Cyprus	46.84	30	HI	29	NAWA	2
Portugal	46.05	31	HI	30	EUR	20
Slovenia	45.80	32	HI	31	EUR	21
Latvia	44.61	33	HI	32	EUR	22
Slovakia	43.43	34	HI	33	EUR	23
United Arab Emirates	43.24	35	HI	34	NAWA	3
Bulgaria	42.84	36	UM	2	EUR	24
Malaysia	42.72	37	UM	3	SEAO	8

Figure 1.1: Global Innovation Ranking (Source: Global Innovation Index 2017)

Furthermore, Malaysian Innovation survey displayed that still, 31.13% firms were non-innovative in Malaysian manufacturing sector, in comparison to 25.90% non-innovative firms in service sector according to MASTIC, 2015-16.

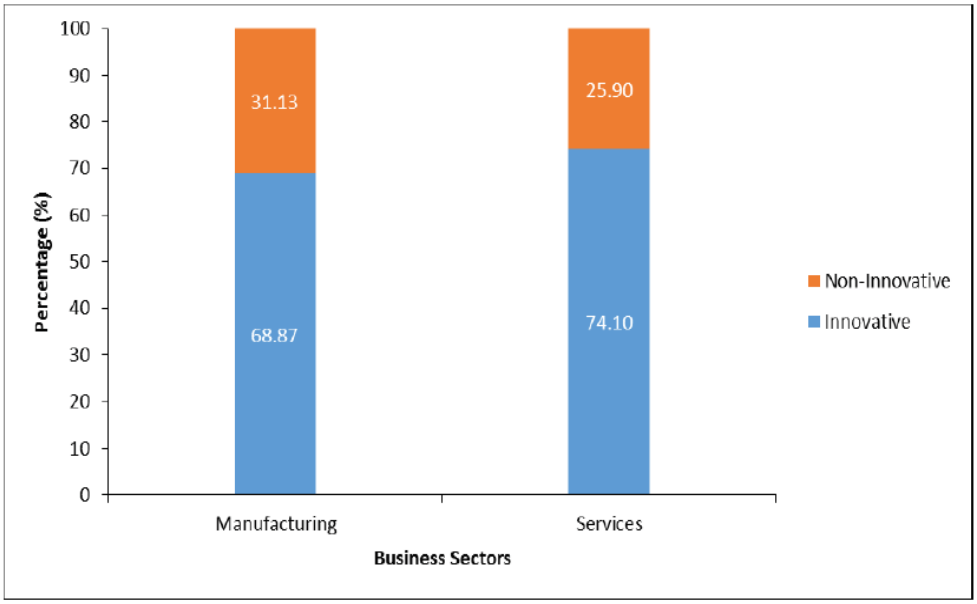

Figure 1.2: Innovation in Malaysian Sectors
(Source: Malaysian Innovation Survey 2015)

Furthermore, new contradictory and different approaches and techniques have created complexities for organizations (Casadesus & Ricart, 2010). There has been literally debate on red oceans of competitive markets and industries, and blue oceans of uncontested markets and industries (Burke, Stel, & Thurik, 2009; Grant, 2016). It becomes more complex as there are different innovation strategies available as the importance of externally coordinated innovation and internally bounded close innovation is frequently discussed in the literature (Caputo, Lamberti, Cammarano, & Michelino, 2016; Clausen, Pohjola, Sapprasert, & Verspagen, 2011). It makes it need of time to investigate the relationship of BOS as the modern business strategy, with innovation performance a vital element of competitive advantage, in the manufacturing organizations of Malaysia. Moreover, it is also triumphed that Blue ocean organizations were only 14 % when launched but achieved profit 61% profit and 38% revenue, while 86% other organizations provided 39% profit and 62% revenue impact (Kim & Mauborgne, 2005). This makes it very interesting to investigate the relationship of BOS elements on innovation performance in Malaysian manufacturing sector.

Table 1.3: Blue Ocean Success (Kim & Mauborgne, 2014)

Indicator	Blue Ocean Strategy	Red Ocean Strategy
Business Launches	14%	86%
Revenue Impact	38%	62%
Profit Impact	61%	39%

Empirical results from the past literature reflect that low innovation leads organizations towards decreased firm performance (Aghion, David, & Foray, 2009). Organizations loose competitive advantage because of the lack of innovation. Organizations growth is hindered in the absence of innovations and organizations sustainability and gradually survival becomes difficult (Zahra, 1993; (Kirner, Kinkel, & Jaeger, 2009). Eeconomic success of the organizations is very difficult in the absence of innovation performance (Inauen & Schenker, 2012). It is stressed that the lack of innovation performance decreases organizational performance (Prajogo & Ahmed, 2007). Moreover, there had been revolutionized innovations in the world e.g. car industry, electronics equipment etc. and overall manufacturing (Lefebvre, 2017). Organizations used their resources in a balanced way for strategic growth, which usually comprised business model revision or development. Companies which managed to successfully adapt and renew their business models over time typically displayed all of these strategizing actions and capabilities in pronounced form (Chesbrough & Teece, 2018). This clearly explains the importance of innovation performance, and how fatal its decline can be for the organizations and economies.

Relationship of business strategy and innovation has attracted interest of many researchers in recent past and present (Allen & Helms, 2006; Berman & Hagan, 2006; Chenhall, Kallunki, & Silvola, 2011; Jajja, Kannan, Brah, & Hassan, 2017; Kalkan, Bozkurt, & Arman, 2014; Prajogo, Laosirihongthong, Sohal, & Boon, 2007; Yuliansyah, Rammal, & Rose, 2016) and there have been some notable efforts in Malaysia also on the impacts of different strategies on new product development or innovation (Bakar, Julienti, & Ahmad, 2013; Mamun, 2018). Furthermore, there was research on the impacts of Blue ocean strategy on organizational performance and competitive advantage, but there was a huge need to investigate the relationship of

Blue ocean strategy and innovation performance. There had been some efforts as (Bourletidis, 2014; Yang & Yang, 2011) to establish the BOS and innovation link, while the relationship of BOS and innovation performance was presented by some researchers (Alghamdi, 2016; Borgianni, Cascini, & Rotini, 2012; Pitta, 2009). But these research efforts were though quantitative but generic, as focused whole BOS as a single construct. Recently, BOS constructs as described by Kim & Mauborgne (2005) have been taking more attraction of researchers (Alghamdi, 2016; Burkhart, 2006; Cleff, Grimpe, & Rammer, 2009; Omar & Tasmin, 2015). An important contribution was Lindič *et al*. (2012), performing the quantitative study taking BOS constructs and their impacts on organizational growth. While there have been some studies on the different constructs of BOS with innovation and performance (Chenhall *et al*., 2011; Cleff *et al*., 2009; Eboreime & Adedoyin, 2013; Lado & Maydeu, 2001; Phongpetra & Johri, 2011; Zhang & Duan, 2010). Therefore, it rose the requirement to investigate the impact of BOS constructs on the innovation performance (Shafiq, Tasmin, Takala, Qureshi, & Rashid, 2017). Furthermore, as the BOS and innovation linkage was established in the previous literature, and different strategies linkage has been found out with innovation performance. There was a need to determine the BOS relationship with open innovation (inbound and outbound open innovation).

Innovation strategy of an organization contributed immensely to the innovation performance of an organization. Open innovation as described by Chesbrough and Appleyard (2007) was being practiced by all contemporary organizations. It had found the great interest of researchers (Caputo *et al*., 2016; Hilman & Kaliappen, 2015; Michelino, Caputo, Cammarano, & Lamberti, 2014; Serrano, Concepción, & Piqueres, 2012). It was found by researchers that open innovation had an established relationship with innovation performance (Caputo *et al*., 2016; Inauen & Schenker, 2012). Rosli & Sidek (2013) also had stressed to find the role of inbound and outbound innovation in Malaysian manufacturing. It was, therefore, important to determine how open innovation strategies (inbound open innovation, and outbound open innovation) impact innovation performance in Malaysian manufacturing sector.

The relationship between competitive strategies, open innovation, and innovation performance was a well discussed and recognized relationship in the literature (Crema et al., 2014). One of the gaps emerging in literature was the analysis of the relationship between BOS constructs and the Innovation Performance, as well

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